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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
January 4, 1978

EXAMINER HEARING

IN THE MATTER OF:)	
)	
Application of Amoco Production Company)	CASE
for a unit agreement, Eddy County,)	6117
New Mexico.)	

BEFORE: Daniel S. Nutter, Examiner.

TRANSCRIPT OF HEARING

A P P E A R A N C E S

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	Santa Fe, New Mexico

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1 MR. NUTTER: We will call the next case, Case
2 Number 6117.

3 MS. TESCHENDORF: Case 6117, application of Amoco
4 Production Company for a unit agreement, Eddy County, New
5 Mexico.

6 MR. BUELL: May it please the Examiner, for Amoco
7 Production Company, Guy Buell, and we have two witnesses.

8 (THREEREUPON, the witnesses were sworn.)

9
10 MR. BUELL: May it please the Examiner, by way of a
11 brief opening statement, Amoco initiated the formation of
12 the South Culebra Bluff Unit Area and due to the fact that we
13 had some early expiring leases within the exploratory unit
14 we had to start commence drilling operations prior to the
15 time we were able to get this matter before you for your
16 approval.

17 Understanding our plight, the Commission was kind
18 enough and considerate enough to issue an emergency order
19 approving this exploratory unit pending this hearing today.

20 I have yet to receive a copy of that emergency order
21 but I believe it will expire, if my mathematics are correct,
22 and they seldom are, on January 10th, 1978.

23 So, in addition to thanking the Commission for its
24 cooperation I would also ask for additional cooperation and
25 ask for approval, final approval, of this unit by the expiration

1 background that resulted in the formation of the South
2 Culebra Bluff Unit?

3 A. Yes, sir.

4 MR. BUELL: Are there any questions as to his
5 qualifications with regard to the unit agreement, Mr.
6 Examiner?

7 MR. NUTTER: No, sir, proceed, sir.

8 Q. (Mr. Buell continuing.) Mr. Allen, let me direct
9 your attention to what has been identified as Amoco's Exhibit
10 Number One and state for the record, please, what that
11 exhibit reflects?

12 A. Exhibit One is a copy of our Exhibit A to the unit
13 agreement to the South Culebra Bluff Unit and shows the
14 leasehold situation.

15 In light pink shows the federal acreage which
16 covers approximately three hundred and twenty acres and it is
17 twenty-five percent of the unit.

18 In yellow is the fee acreage which covers approximately
19 nine hundred and sixty acres and there is no state acreage
20 within the twelve hundred and eighty acre unit.

21 Q. All federal or fee?

22 A. Yes, sir.

23 Q. All right, sir. Before we go into the unit agreement,
24 itself, let me ask you this what was the primary purpose of
25 this unit agreement?

1 A. To drill exploratory wells.

2 Q. As I pointed out in my opening statement the test
3 well is currently drilling?

4 A. Yes, at approximately eleven thousand five hundred
5 feet.

6 Q. All right. While we are still looking at Exhibit
7 Number One, let me ask you this, what percent of the working
8 interest ownership within the this twelve hundred and eighty
9 acre exploratory unit are committed to the unit?

10 A. One hundred percent of the working interest owners
11 are committed and there are no unleased tracts within the
12 unit.

13 Q. All right. Let me ask you the same question with
14 regard to the royalty interest. What percent of the royalty
15 interest do you have committed?

16 A. Approximately fifty-one percent to date.

17 Q. Are you still working, Mr. Allen, on royalty owner
18 sign-up?

19 A. Yes, sir, and we are optimistic that we will have
20 several additional royalty owners sign within the next week
21 who have asked for person to person meetings later in the
22 week in Carlsbad.

23 Q. All right, sir. Let me ask you this, with the
24 status of sign-ups that you now have, one hundred percent
25 of the working interest -- and what was the royalty percentage?

1 A Fifty-one percent.

2 Q Fifty-one percent of the royalty, do you feel that
3 the signatory parties to this unit agreement control enough
4 of the acreage to give them effective control of the
5 exploratory activities within the unit?

6 A Yes, sir, we do.

7 Q All right, sir. Do you have any other comments on
8 Exhibit Number One before we pass to the next exhibit?

9 A No, sir.

10 MR. BUELL: If it please the Examiner, our Exhibit
11 Number Two will be the unit agreement. We have already
12 furnished you three copies which I notice are in the hearing
13 file and unless you would like to have your file burdened
14 down -- if we could just use those --

15 MR. NUTTER: That will be fine.

16 MR. BUELL: And I will see that they are properly
17 identified -- and the same thing holds true to the operating
18 agreement between ourselves and Delta Drilling Company.

19 Q (Mr. Buell continuing.) All right. With respect
20 to what will be identified as Amoco's Exhibit Number Two, Mr.
21 Allen, let me ask you this, that is the unit agreement
22 forming the South Culebra Bluff Unit?

23 A Yes, sir. Exhibit Two has been approved by the
24 U.S.G.S. in Roswell as to form as a standard unit agreement
25 for southeast New Mexico.

1 Q Since this is a standard form, Mr. Allen, and the
2 Examiner and the Commission have seen many of them unless
3 the Examiner would like some particular provision discussed
4 I don't see any sense in drawing out the hearing covering
5 material that you have seen and heard many, many times --

6 MR. NUTTER: Would you just go into the unit operator?
7 I notice that it does designate Delta as the unit operator
8 and explain why Delta is the unit operator and Amoco is
9 the applicant?

10 Q (Mr. Buell continuing.) Yes, sir --

11 MR. NUTTER: Amoco apparently owns the leases that
12 are shown on Exhibit A here --

13 MR. BUELL: Yes, sir. Amoco initiated, Mr. Examiner,
14 the formation of the South Culebra Bluff Draw Unit and while
15 we were in our phase of putting this unit together we made
16 an agreement with Delta Drilling Company effective October 10,
17 1977, that they would take over as exploratory unit operators
18 and under our operating agreement, also, take over the
19 supervision of drilling of the test well.

20 We are retaining an interest in our properties. So,
21 while Delta Drilling Company will be the operator of the unit
22 Amoco is still an extremely interested party in this unit.

23 MR. NUTTER: Amoco is the lessee of record on all
24 of these leases in the unit area, is that correct?

25 MR. BUELL: Yes, sir, that is correct.

1 MR. NUTTER: Is Delta acting as your agent or are
2 they taking a farm-out on the Amoco acreage or just what
3 is it?

4 MR. BUELL: It will be a farm-out, Mr. Examiner, and
5 be consistent with the operating agreement between ourselves
6 and Delta Drilling Company which will be our Exhibit Three
7 in this hearing.

8 MR. NUTTER: Okay. Now, before this witness is
9 excused, then, you sought the emergency order because, I
10 think it was stated, you had quickly expiring leases but I
11 see on Exhibit B of the unit agreement the earliest expiration
12 date I see is in March of '78?

13 MR. BUELL: Yes, sir, that is correct. We started
14 the well because of the early expiring leases.

15 MR. NUTTER: You had to have the well completed? Is
16 that the type of leases -- you have to have production by
17 the expiration date?

18 MR. BUELL: Yes.

19 MR. NUTTER: You didn't have to have a well started
20 but you had to have production?

21 MR. BUELL: It is a production type of lease and we
22 wanted to be sure that we had plenty of time and the primary
23 reason we asked for the emergency order -- we were approaching
24 or we felt we were approaching, before you could act on this
25 hearing, our objective depth and the U.S.G.S. prefers to have

1 your approval prior to the well reaching the objective
2 depth.

3 Have I got that approximately correct, Mr. Allen?

4 THE WITNESS: Correct.

5 MR. NUTTER: What does the unit call for as far as
6 drilling the discovery?

7 MR. BUELL: That --

8 MR. NUTTER: Let the witness answer --

9 MR. BUELL: Okay.

10 A. It calls for drilling to the Morrow formation or
11 no deeper than thirteen thousand three hundred feet.

12 MR. NUTTER: Thirteen what?

13 A. Thirteen thousand three hundred.

14 MR. NUTTER: Okay. Would you proceed, then?

15 MR. BUELL: Our next exhibit, Mr. Examiner, is
16 already in your files. That's the operating agreement which
17 I mentioned before and we will have it properly identified
18 as Exhibit Number Three and I will just ask this witness--
19 you have seen that operating agreement that is in the
20 Commission's files and it is a true and correct copy of the
21 operating agreement between Amoco and Delta Drilling Company?

22 A. Yes, sir, it is.

23 MR. BUELL: Do you have anything else you would care
24 to add to your testimony at this time, Mr. Allen?

25 A. No, sir.

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MR. BUELL: May it please the Examiner, that's all we have by way of direct of Mr. Allen.

MR. NUTTER: Are there any questions of Mr. Allen, Ms. Teschendorf?

MS. TESCHENDORF: Mr. Allen, in Section Ten of the unit agreement, the plan of future development and operations, the Oil Commission has jurisdiction -- they look after the fee lands in the unit agreement -- would Amoco have any objection to our order including a provision that plans of development and operation will be submitted to the O.C.C. for approval, also?

A. No, ma'am, that's acceptable to us.

MR. NUTTER: Are there any other questions of this witness?

He may be excused.

(THEREUPON, the witness was excused.)

MR. BUELL: We would like to call our next witness, Mr. Examiner, Ms. Buchanan.

CATHY BUCHANAN

was called as a witness by the applicant, and having been first duly sworn, testified upon her oath as follows, to-wit:

DIRECT EXAMINATION

BY MR. BUELL:

1 Q Mr. Examiner, you also have in your files three
2 copies of what will be our Exhibit Four and that is the
3 exhibit that is currently being placed on the wall. It is
4 a rather large exhibit.

5 I could -- I have Three identified as Exhibit
6 Four and if you could just make that substitution and that
7 way we won't burden the file.

8 MR. NUTTER: That is what has been identified as
9 a stratigraphic cross section of the proposed South Culebra
10 Bluff Unit, correct?

11 MR. BUELL: Yes, sir.

12 Q (Mr. Buell continuing.) Ms. Buchanan, would you
13 state your full name and by whom you are employed and in
14 what capacity and in what location, please?

15 A Cathy McCeevey Buchanan and currently employed by
16 Amoco Production Company as a Petroleum Geologist in Houston,
17 Texas.

18 Q Would you briefly review your educational background
19 in the field of geology for us, Ms. Buchanan?

20 A I have a B.S. in Geology in 1972, from Texas Tech
21 University; M.S. 1976, also in Geology, Texas Tech University.

22 Q What has been your work experience in the field of
23 geology since graduation?

24 A I have been an exploration geologist for Amoco for
25 over three years.

1 Q And is all of your experience with Amoco been in
2 the southeast portion of New Mexico?

3 A Yes, sir.

4 Q And dealing particularly with mapping the Morrow
5 formations?

6 A Yes, sir.

7 MR. BUELL: Are there any questions as to her
8 qualifications, Mr. Examiner?

9 MR. NUTTER: No, the witness is qualified.

10 Q (Mr. Buell continuing.) Ms. Buchanan, you may want
11 to go to the board -- I'll tell you, before you do that the
12 Examiner and this Commission are quite familiar with the
13 Morrow formation but it might be of benefit for the record
14 if initially you would just give us some very brief and
15 general comments with regard to the Morrow and how you work
16 it in southeast New Mexico?

17 A Our exploration strategy in the Morrow has been
18 largely on a statistical basis. The lower Pennsylvanian
19 sands in the Delaware Basin were deposited in a rapidly
20 shifting strand-like situation.

21 Because of that, the sands, themselves, are
22 relatively thin and highly discontinuous and not easy to
23 trace from the well logs, also from samples.

24 Q All right. Now, let me direct your attention to
25 what has been identified as Amoco's Exhibit Four and if you

1 would care to go over there to the board -- let me give you
2 this pointer --and that has already been identified as a
3 stratigraphic cross section, for the record, Ms. Buchanan
4 and what you might do is direct everyone's attention to the
5 inset map and the trace of the cross section and just name
6 the starting logs and the concluding log and how it goes
7 through our exploratory unit area?

8 A. This is a four-well stratigraphic cross section
9 extending from the Amoco No. 1 Old Indian Draw, located here,
10 to the Amoco No. 1 Teledyne Well, located here extending
11 to here, our proposed well location, which is currently drilling
12 located here by the stick.

13 Q. Ms. Buchanan, when you say here, that doesn't
14 precisely locate it in the transcript of the record.

15 Why don't we just say that -- start with the northern
16 most well and point out that it is the northern most well
17 on the section, as well as the one on the left, and the
18 approximate location of the exploratory unit of the Teledyne
19 Well which is the last well on your cross section to the
20 east? I mean, to the south.

21 A. Okay. The first well is located in 18 of 22 South,
22 28 East and the last well is located in Section 13, 23 South,
23 28 East, Eddy County, New Mexico.

24 The proposed well is located in Section 23, 23,
25 28.

1 Q And that is just to the east of our exploratory
2 unit that we are discussing here today?

3 A Yes, sir, the last well.

4 Q And you have run this section through the location
5 of the well that is currently drilling, have you not?

6 A Yes, sir.

7 Q And you have shown it with the stick on the cross
8 section and there are no logs as yet available on it?

9 A Yes, sir.

10 Q All right. Now, go right ahead and state for the
11 record what this stratigraphic cross section reveals to you
12 with regard to the deposition and the occurrences of the
13 Morrow formation?

14 A This particular stratigraphic is colored coded in
15 the Morrow clastic interval which I have divided into the
16 lower Morrow and the Middle Morrow, the Upper Morrow being a
17 "primanate" section and not productive.

18 In this particular case I have subdivided the clean
19 sand unit into channel sands, represented in orange, and the
20 bar sands represented in yellow.

21 The proposed well location will encounter both bar
22 and channel sands. The lower Morrow is a "deltaic" type
23 situation and the Middle Morrow "barial", bar.

24 Q Now, none of the four wells, the log of which you
25 have on this section, were producers, were they not?

1 A. No, sir, none of them except for the Old Indian
2 Draw Well which was productive in the Delaware sand, only,
3 which was high in the hole.

4 The Teledyne Well over here in Section 13, however,
5 which is down dip to the east of our proposed unit encountered
6 good gas shows from the Strawn through the Morrow section,
7 although the Lower Morrow section was never tested in that
8 well.

9 Q. Now, using data that you obtained from this strati-
10 graphic cross section were you able to prepare an isolith or
11 an isopach of the Morrow formation within the exploratory
12 unit, itself?

13 A. Yes, I was.

14 Q. And in that connection, let me direct your attention
15 to what has been identified as our Exhibit Number Five --
16 Mr. Examiner, you also have copies of these in the file --
17 that's the isolith or isopach on the Lower Morrow.

18 Do you want to come back, now, Ms. Buchanan, unless
19 you need to point out something on that exhibit?

20 A. Yes, I think I will.

21 Q. All right.

22 MR. NUTTER: Are you going to trade us marked
23 exhibits for unmarked?

24 MR. BUELL: Yes, either trade or mark them for you.

25 Go right ahead with Exhibit Number Five, Ms. Buchanan.

1 A. Okay. This is an isolith or isopach, special
2 type of isopach, of the Lower Morrow clean sand section
3 less than A.P.I. unit, cleanliness.

4 In this instance I mapped the entire interval and
5 it shows the permeability barrier created by this channel
6 to the west which cuts off any porous sands within the
7 unit boundary.

8 The colored area is sands greater than seventy
9 feet which you can see is the best potential in our statistical
10 drilling for the Morrow section in the proposed unit.

11 Q. Have you shown by an area the approximate location
12 of the test well that is currently drilling?

13 A. Yes.

14 Q. And although this exhibit says proposed well
15 location, actually, that is the existing well currently
16 drilling?

17 A. Yes, sir.

18 Q. Do you have any other comments on Exhibit Five?

19 A. No, sir.

20 Q. Direct your attention, if you would, Ms. Buchanan,
21 to Exhibit Number Six and we will also identify those for
22 you, Mr. Examiner.

23 What is Exhibit Number Six, Ms. Buchanan?

24 A. It is very similar to Exhibit Number Five and,
25 once again, it is an isopach of the net clean sands of the

1 Middle Morrow sands, this time.

2 Once again, I have highlighted in yellow the
3 maximum thickness of sands in the Morrow prospects of this
4 unit.

5 Q. Do you have any other comments on this isolith,
6 Exhibit Six?

7 A. No, sir.

8 Q. Ms. Buchanan, do you have anything else that you
9 would like to add to your testimony at this time?

10 A. No, sir, I can't think of anything.

11 MR. BUELL: May it please the Examiner, that's all
12 we have by way of direct from Ms. Buchanan.

13 I would like to formally offer Amoco's Exhibits
14 One through Six, inclusively.

15 MR. NUTTER: Amoco's Exhibits One through Six will
16 be admitted in evidence.

17 Does anyone have any questions of this witness?
18 She may be excused.

19 (THEREUPON, the witness was excused.)

20 MR. BUELL: That's all we have, Mr. Examiner.

21 MR. NUTTER: Does anyone have anything they wish
22 to offer in Case 6117?

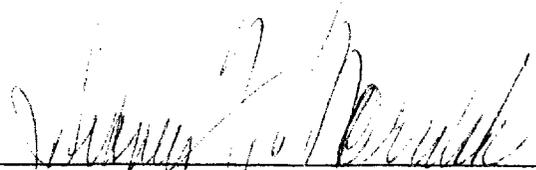
23 We will take the case under advisement and we will
24 take a fifteen minute recess.

25 (THEREUPON, the case was concluded.)

REPORTER'S CERTIFICATE

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I, SIDNEY F. MORRISH, a Certified Shorthand Reporter,
do hereby certify that the foregoing and attached Transcript
of Hearing before the New Mexico Oil Conservation Commission
was reported by me, and the same is a true and correct record
of the said proceedings to the best of my knowledge, skill and
ability.



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